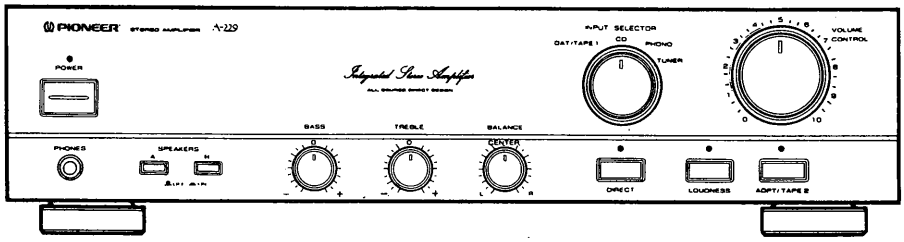
Operating Instructions

STEREO AMPLIFIER

A-229/A-119



The illustration shows model A-229.

Thank you for buying this PIONEER product.
Please read through these operating instructions so you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.
In some countries or regions, the shape of the power plug and power outlet may sometimes differ from that shown in the explanatory drawings. However, the method of connecting and operating the unit is the same.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD. DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

IMPORTANT NOTICE

[For U.S. and Canadian models]

The serial number for this equipment is located on the rear panel. Please write this serial number on your enclosed warranty card and keep it in a secure area. This is for your security.

[For Canadian model]

CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD. RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

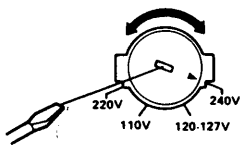
ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

LINE VOLTAGE SELECTOR SWITCH

Only multi-voltage models are provided with this switch. U.S., Canadian, European, U.K., and Australian models are not provided with this switch.
Mains voltage in Saudi Arabia are 127 V and 220 V only.
The line voltage selector switch is on the rear panel. Before your model is shipped from the factory, this switch is set to the power requirements of the destination. Check that it is set properly before plugging the power cord into the AC wall socket. If the voltage is not properly set or if you move to an area where the voltage requirements differ, adjust the selector switch as follows.

1. Use a medium-size screwdriver.
2. Insert the screwdriver into the groove on the voltage selector, and adjust so that the tip of the arrow points to the voltage value of your area.

VOLTAGE SELECTOR



Medium-size screwdriver

PIONEER®
The Art of Entertainment

IMPORTANT

The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT

If the apparatus is fitted with AC mains power outlet(s), see REAR PANEL FACILITIES for convenient connection of additional Hi-Fi component(s). Make all connections to the AC outlet(s) and the signal terminals first. Connect the plug to the wall socket last (make sure that the power switch is off.)

FOR USE IN THE UNITED KINGDOM

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral
Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured marking identifying the terminals in your plug proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.
Do not connect either wire to the earth terminal of a three pin plug.
Equipment sold in the U.K. is not supplied with a power plug.

SAFETY INSTRUCTIONS

READ INSTRUCTIONS – All the safety and operating instructions should be read before the appliance is operated.
RETAIN INSTRUCTIONS – The operating instructions should be retained for future reference.
HEED WARNING – All warnings on the appliance and in the operating instructions should be adhered to.
FOLLOW INSTRUCTIONS – All operating and use instructions should be followed.
WATER AND MOISTURE – The appliance should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.
LOCATION – The appliance should be installed in a stable location.
WALL OR CEILING MOUNTING – The appliance should not be mounted to a wall or ceiling.
VENTILATION – The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
HEAT – The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
POWER SOURCES – The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
POWER-CORD PROTECTION – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
POLARIZATION – If your purchased product is provided with a polarized power plug, please read the following instructions. This product is equipped with a polarized alternating current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
CLEANING – The appliance should be cleaned only with a polishing cloth or a soft dry cloth. Never clean with furniture wax, benzine, insecticides or other volatile liquids since they may corrode the cabinet.

POWER LINES – An outdoor antenna should be located away from power lines.
NONUSE PERIODS – The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
OBJECT AND LIQUID ENTRY – Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
DAMAGE REQUIRING SERVICE – The appliance should be serviced by a Pioneer authorized service center or qualified service personnel when:

- The power-supply cord or the plug has been damaged.
- Objects have fallen, or liquid has been spilled into the appliance.
- The appliance has been exposed to rain.
- The appliance does not appear to operate normally or exhibits a marked change in performance.
- The appliance has been dropped or the enclosure damaged.

SERVICING – The user should not attempt to service the appliance beyond that described in the operating instructions. For all other servicing, contact the nearest Pioneer authorized service center.

OUTDOOR ANTENNA GROUNDING – If an outside antenna is connected to the antenna terminal, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges.
In the U.S.A. section 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Fig. A.
CART – An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

NEC NATIONAL ELECTRIC CODE

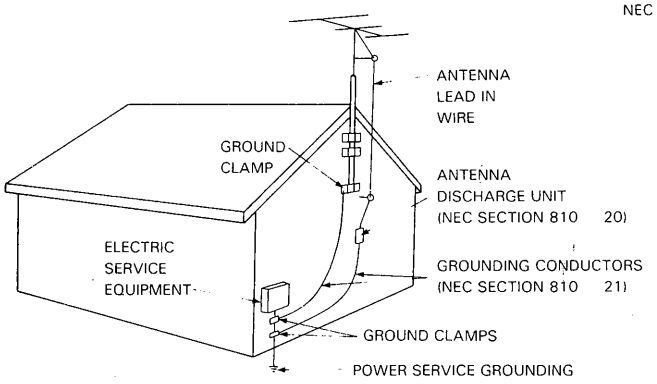

ANTENNA LEAD IN WIRE
GROUND CLAMP
ANTENNA DISCHARGE UNIT (NEC SECTION 810 20)
ELECTRIC SERVICE EQUIPMENT
GROUNDING CONDUCTORS (NEC SECTION 810 21)
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (NEC ART 250, PART H)

FIG. A

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"This product complies with the Radio Interference requirements of the EC (European Community) Directive 87/308/EEC."

FEATURES

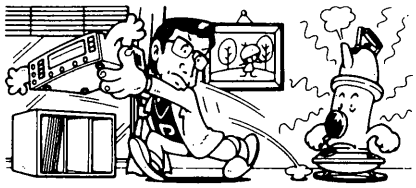
- High-power Output of 40 W + 40 W/8 Ω (DIN) [model A-119 ..... 30 W + 30 W/8 Ω (DIN)]
- The use of a DIRECT circuit ensures high fidelity playback of consistent frequency characteristics, with maximum clarity. (A-229 only)
- Speaker terminals for two speakers systems are provided. (A-229 only)

INSTALLATION

LOCATION

Install the amplifier in a well-ventilated location where it will not be exposed to high temperature or humidity.

Do not install the amplifier in a location which is exposed to direct rays of the sun, or near to hot appliances or radiators. Excessive heat can adversely affect the cabinet and internal components. Installation of the amplifier in a damp or dusty environment may result in malfunction or accident. (Also avoid installation near cookers etc., where the amplifier may be exposed to smoke from oil, steam or heat.)



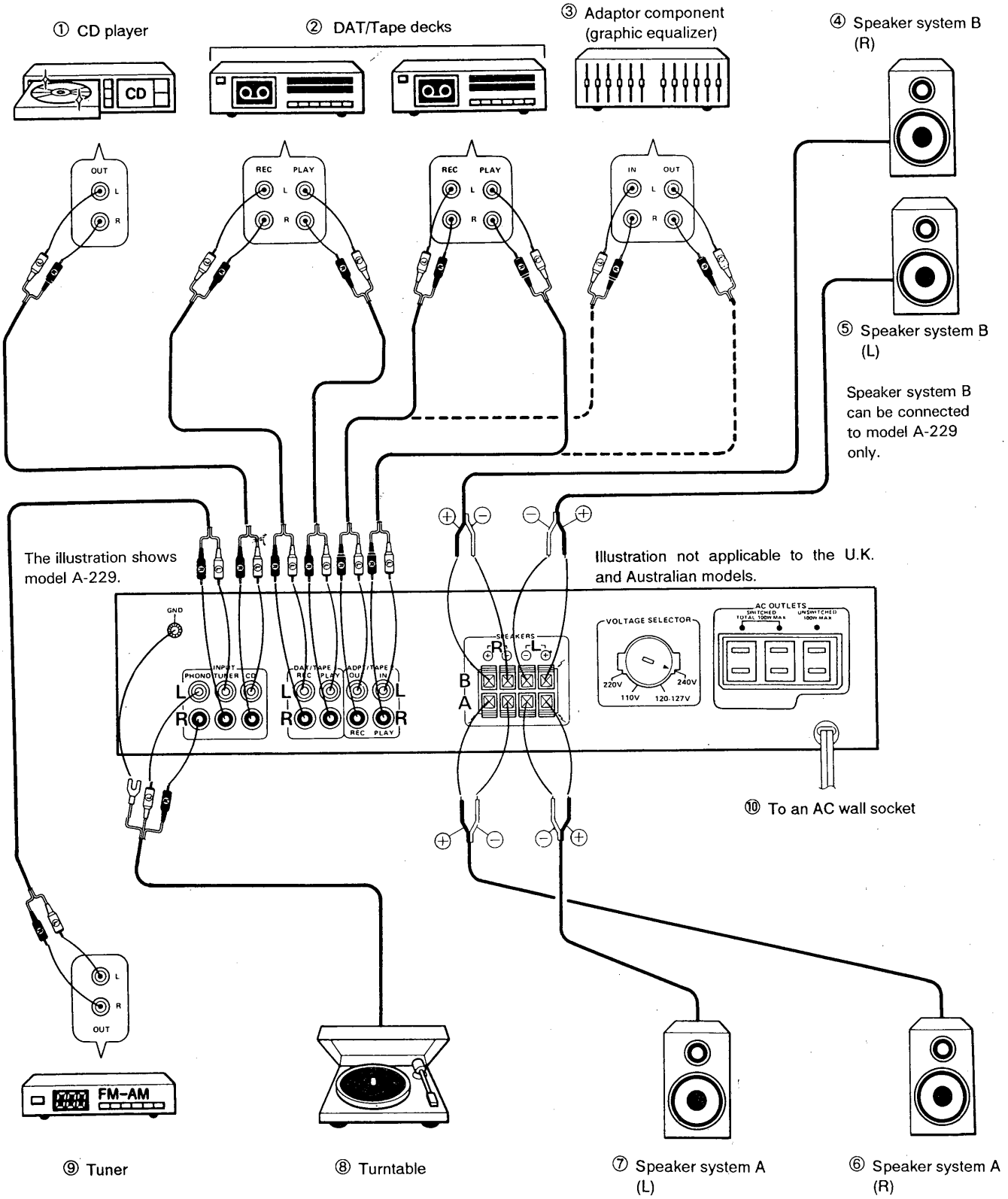
POWER-CORD CAUTION

Handle the power cord by the plug. Do not pull out the plug by tugging the cord and never touch the power cord when your hands are wet as this could cause a short circuit or electric shock. Do not place the unit, a piece of furniture, etc., on the power cord, or pinch the cord. Never make a knot in the cord or tie it with other cords. The power cords should be routed in such a way that they are not likely to be stepped on. A damaged power cord can cause fire or give you an electrical shock. Check the power cord regularly. When you find it damaged, ask your nearest PIONEER authorized service center or your dealer for a replacement.

MAINTENANCE OF EXTERNAL SURFACES

- Use a polishing cloth or dry cloth to wipe off dust and dirt.
- When the surfaces are very dirty, wipe with a soft cloth dipped in some neutral cleanser diluted five or six times with water, and wrung out well, and then wipe again with a dry cloth. Do not use furniture wax or cleaners.
- Never use thinners, benzine, insecticide sprays and other chemicals on or near this unit, since these will corrode the surfaces.

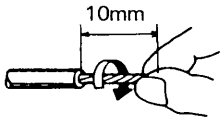
CONNECTIONS



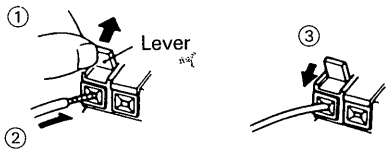
① **CD player**
② **DAT/Tape decks**
③ **Adaptor component (graphic equalizer)**
④ **Speaker system B (R)**
⑤ **Speaker system B (L)**
⑥ **Speaker system A (R)**
⑦ **Speaker system A (L)**
⑧ **Turntable**
⑨ **Tuner**
⑩ **To an AC wall socket.**

CONNECTING THE SPEAKER CORDS

1. Strip off the vinyl covering and twist the tip of the wire core.



2. Raise the lever in the direction of the arrow and insert the exposed conductor into the hole.
3. Now return the lever to its original position to secure the cord.



NOTE:
Do not allow any of the cord conductors to protrude from the terminals or touch any other conductors. Malfunctioning or breakdowns may occur when conductors come into contact with each other.

Speaker Impedance
[Model A-229]

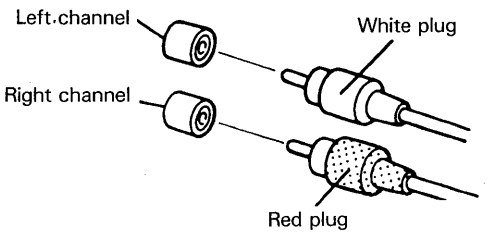
- When speaker systems are connected to only SPEAKERS A or SPEAKERS B terminals, such speakers should have rated impedance in the range of 4-16 Ω.
- When speakers are connected to both the A and B terminals, they should have a rated impedance in the range of 8-32 Ω.

[Model A-119]

- The speaker systems used should have a reted impedance in the range of 6 - 16 Ω.

CONNECTING THE INPUT/OUTPUT CORDS

Connect the white plug to the L (left) side, and the red plug to the R (right) side. Be sure to push the plugs securely.



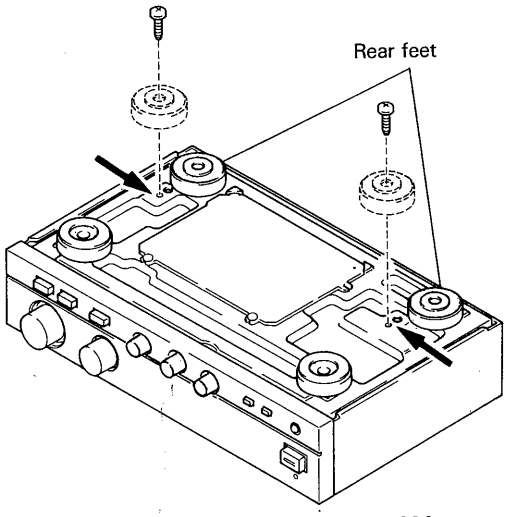
The INPUT/OUTPUT jacks of this unit are dull tinplated, for high audio quality.

[U.K., models only]

Model A-229 and A-119 can be placed on another component with less depth by changing the position of the rear feet. (However, a minimum depth of 200 mm is required.)

Change the position of the rear feet as follows:

1. **Remove the AC plugs, connection cords etc., connected to the amplifier, and turn the unit upside down.**
2. **Remove the screws holding the rear feet using a (+) screwdriver.**
3. **Move the rear feet to the holes located towards the center of the unit (see the arrows in the diagram).**
4. **Secure the feet by tightening the screws removed in step 2 with a (+) screwdriver.**

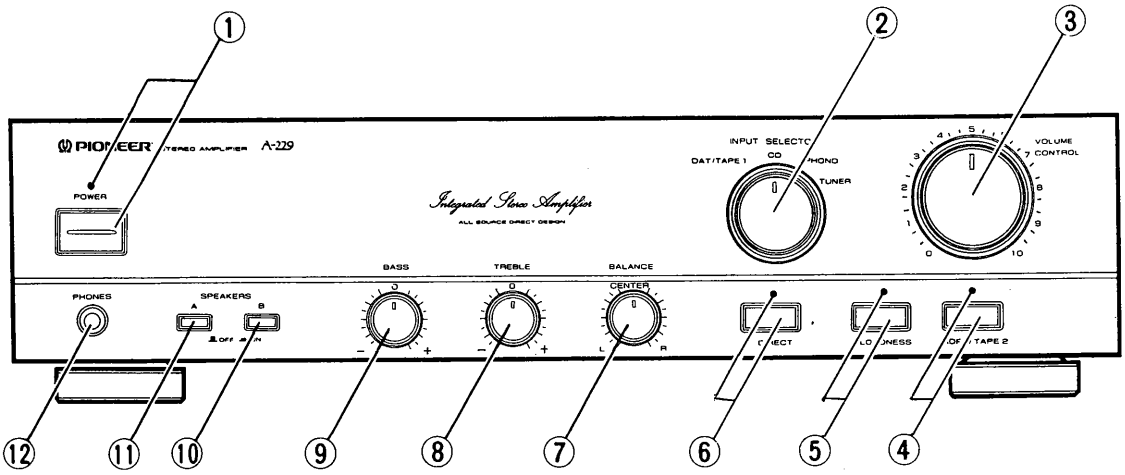


The illustration shows model A-229.

PANEL FACILITIES

[FRONT PANEL]

The illustration shows medel A-229.
Model A-119 is not equipped with ⑥, ⑩ and ⑪.



① POWER switch/indicator

Press to turn power to the unit ON and OFF.

ON:

Indicator lights.

OFF:

Indicator goes out.

② INPUT SELECTOR switch

Use to select the playback source.

TUNER:

For AM or FM broadcast reception with a tuner.

PHONO:

For record playback with a turnetable.

CD:

For compact disc playback with a CD player.

DAT/TAPE 1:

For playback with a tape deck or digital audio tape deck connected to the DAT/TAPE 1 terminals.

③ VOLUME CONTROL

Use to adjust the volume level.

④ ADPT/TAPE 2 monitor switch/indicator

Use when there is an adaptor component (grahic equalizer, etc.) or tape deck connected to the ADPT/TAPE 2 terminals.

OFF:

Indicator goes out when not in use.

ON:

Indicator lights when using the adaptor component or listening to the tape deck.

NOTE:

- *When no connections are made to the ADPT/TAPE 2 terminals, or when they are not in use, be sure to set to this switch to the OFF position. (No sound will be heard if it is set to ON position)*
- *When the DIRECT switch is set to ON, the input to be reproduced is always selected with the INPUT SELECTOR, regardless of whether the ADPT/TAPE 2 indicator lights or not. Furthemore, when the ADPT/TAPE 2 indicator is ON, signals input thorough ADPT/TAPE 2 are output at DAT/TAPE 1 REC OUT. (A-229 only)*

⑤ LOUDNESS switch/indicator

Use when listening at low volume levels.

ON:

The indicator lights: Boosts low and high frequencies to give added punch to playback even at low volume levels.

OFF:

The indicator goes off: Should normally be left in this position.

⑥ DIRECT switch/indicator (A-229 only)

Use this switch when you do not wish to pass the output from input terminal equipment through the various frequency adjusting circuits (BASS, TREBLE, BALANCE.)

ON:

The indicator lights: The signals input through the input terminals are reproduced without passing thorough the various frequency adjusting ciecuits. This results in flat, pure sound which is a more faithful reproduction of the input source.

OFF:

The indicator goes out: The signal passes through the various frequency adjusting circuits.

⑦ BALANCE control

Should normally be left in the center position. Adjust the balance if the sound is louder from one of the speakers. If the right side is louder, turn toward the L (left) position and if the left side is louder, turn toward the R (right) position.

NOTE:

This control does not operate when the DIRECT switch is in the ON position. (A-229 only)

⑧ TREBLE tone control

Use to adjust the high-frequency tone. The center position is the flat (normal) position. When turned to the right, high-frequency tone is emphasized; when turned to the left, high-frequency tone is de-emphasized.

NOTE:

This control does not operate when the DIRECT switch is in the ON position. (A-229 only)

⑨ BASS tone control

Use to adjust the low-frequency tone. The center position is the flat (normal) position. When turned to the right, low-frequency tone is emphasized; when turned to the left, low-frequency tone is de-emphasized.

NOTE:

This control does not operate when the DIRECT switch is in the ON position. (A-229 only)

⑩ SPEAKERS B selector switch (A-229 only)

Use this switch to listen to the speaker systems connected to the SPEAKERS B terminals.

ON (▬):

Depressed position: Sound is heard from the speaker systems.

OFF (■):

Released position: No sound is heard from the speaker systems. Set to this position when listening with headphones.

⑪ SPEAKERS A selector switch (A-229 only)

Use this switch to listen to the speaker systems connected to the SPEAKERS A terminals.

ON (▬):

Depressed position: Sound is heard from the speaker systems.

OFF (■):

Released position: No sound is heard from the speaker systems. Set to this position when listening with headphones.

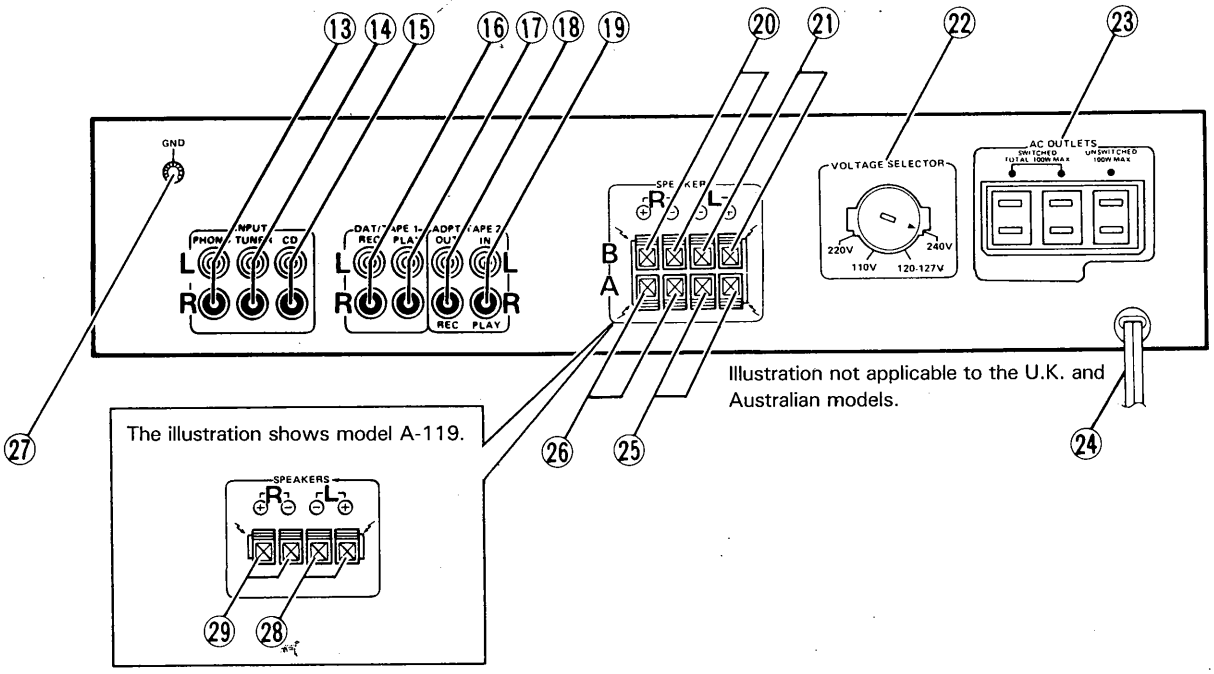
⑫ PHONES jack

When using headphones, insert the plug into this jack. With model A-119 the output to the speakers is cut automatically when connecting headphones.

[REAR PANEL]

The illustration shows model A-229.
Model A-119 is not equipped with ⑳ and ㉑.

The U.K. and Australian models (A-229 and A-119) are not equipped with ㉒ and ㉓.



⑬ **PHONO terminals.**
⑭ **TUNER terminals.**
⑮ **CD terminals.**
⑯ **DAT/TAPE 1 REC terminals.**
⑰ **DAT/TAPE 1 PLAY terminals.**
⑱ **ADPT/TAPE 2 OUT (REC) terminals**
⑲ **ADPT/TAPE 2 IN (PLAY) terminals**
⑳ **SPEAKERS B terminals (right channel)**
(A-229 only)
㉑ **SPEAKERS B terminals (left channel)**
(A-229 only)
㉒ **VOLTAGE SELECTOR**
(Not provided on the models for U.K. and Australia.)

㉓ **AC OUTLETS**
(Not provided on the models for U.K. and Australia.)

AC OUTLETS (SWITCHED)
Power supplied through these outlets is turned on and off by the amplifier's POWER switch. Total electrical power consumption of connected equipment should not exceed 100 W.

AC OUTLET (UNSWITCHED)
Power flows continuously to this outlet, regardless of whether the amplifier is switched ON or OFF. Electrical power consumption of the connected equipment should not exceed 100 W.
The equipment should be disconnected by removing the power plug from the wall socket when not in regular use, e.g., when on vacation.

NOTE:
Do not connect appliances with high power consumption such as heaters, irons, or television sets to the AC OUTLETS in order to avoid overheating or fire risk.

㉔ **Power cord.**
Connect this cord to an AC wall socket, or the AC outlet of an audio timer.

㉕ **SPEAKERS A terminals (left channel).**
㉖ **SPEAKERS A terminals (right channel).**
㉗ **Turntable ground terminal (GND).**
㉘ **SPEAKERS terminals (left channel).**
㉙ **SPEAKERS terminals (right channel).**

OPERATIONS

Switch numbers used in the following explanations refer to the numbers appearing in the illustration on page 6.

BEFORE BEGINNING OPERATIONS

Set the controls and switches as follows:See page 6.

1. **Set POWER switch ① to ON.**
2. **Press the SPEAKERS A selector switch ⑪, SPEAKERS B selector switch ⑩, or both switches. (A-229 only)**
3. **Set the BALANCE control ⑦ to the center position.**
4. **Set the DIRECT switch ⑥ to OFF. (A-229 only)**
5. **Set the ADPT/TAPE 2 monitor switch ④ to OFF.**

PLAYBACK PROCEDURES

1. **Set the INPUT SELECTOR switch ② to the desired playback source.**

- For reception of an AM/FM broadcast: Set to [TUNER].
- For playback of a record: Set to [PHONO].
- For playback of a compact disc: Set to [CD].
- For playback of a tape: Set to [DAT/TAPE 1].

2. **Operate the equipment to begin playback.**
3. **Adjust playback volume with VOLUME CONTROL ③ on this unit.**

RECORDING TAPES:

1. **Select the recording equipment with REC SELECTOR switch ②.**
2. **Begin recording by operating the recording equipment and tape deck.**

- Refer to the operating instructions for your tape deck for proper operating procedures.

COPYING TAPES:

When two decks are used (or when using double cassette deck), you can record the sounds from one deck onto the other.

Application examples:

- To make a tape copy with contents identical to the original tape.
- To edit a recording of an FM broadcast in order to cut out unwanted commercials, recording only desired material onto another tape.

When using two tape decks

1. **Load tapes for playback (prerecorded tape) and recording (blank tape) into the respective tape decks.**
2. **Select the copying direction with the INPUT SELECTOR switch ② and ADPT/TAPE 2 monitor switch ④.**

- When copying from the tape deck of the DAT/TAPE 1 terminals to the tape deck of the ADPT/TAPE 2 terminals: Set the INPUT SELECTOR switch to DAT/TAPE 1 and ADPT/TAPE 2 monitor switch to OFF.
- When copying from the tape deck of the ADPT/TAPE 2 terminals to the tape deck of the DAT/TAPE 1 terminals: Set the ADPT/TAPE 2 monitor switch to ON and the INPUT SELECTOR to a position other than DAT/TAPE 1.

3. **Operate the tape decks to begin copying.**

Set the tape deck with the original (playback) tape to the playback mode, and set the tape deck with the blank tape to the recording mode.

TO USE THE COMPONENT CONNECTED TO THE ADPT/TAPE 2 TERMINALS:

[For an adaptor component]

By connecting a graphic equalizer, source sounds (from records, tapes, AM/FM broadcasts, etc.) can be heard with added sound and tone compensation.
Sounds compensated via the adaptor component can be recorded.

NOTE:
When the DIRECT switch ⑥ is ON, the adaptor component cannot be used to modify the source sounds. (A-229 only)

1. **Set the ADPT/TAPE 2 monitor switch ④ to ON.**
2. **Play back the source.**
3. **Operate the adaptor component.**

[For a tape deck]

A tepe deck connected here can be operated in the same way (recording and playback) as a deck connected to the DAT/TAPE 1 terminals. Also, if two decks are used, you can copy tapes from one deck onto the other (see the section "Copying Tapes")

NOTE:
To play a tape with the tape deck connected to the ADPT/TAPE 2 terminals the DIRECT switch must be set to OFF (A-229 only)

1. **Set the ADPT/TAPE 2 monitor switch ④ to ON.**
2. **Operate the tape deck to perform playback (or recording).**

TROUBLESHOOTING

Incorrect operations are often mistaken for trouble and malfunctions. If you think that there is something wrong with this component, check the points below. Sometimes the trouble may lie in another component. Investigate the other components and electrical appliances being used.
If the trouble cannot be rectified even after exercising the checks listed below, ask your nearest PIONEER authorized service center or your dealer to carry out repair work.

Symptom	Cause	Remedy
No power supplied to unit.	• Power plug is disconnected from outlet. • The component power plug has been plugged into another component power outlet (e.g. timer, etc.) but power to that unit is disconnected.	• Insert plug securely into outlet. • Turn on power to the other component.
No sound.	• Connecting cords are disconnected from terminals, or connected incorrectly. • Terminals, or connecting cords pin plugs are dirty. • The ADPT/TAPE 2 monitor switch ④ is set to ON (except when using an adaptor component). • The tape deck for playback connected to ADPT/TAPE 2 and the DIRECT switch ⑥ is set to ON (A-229 only) • Operation of other components is incorrect. • Both SPEAKERS selector switches are set to "OFF" (A-229 only). • The position of the INPUT SELECTOR ② does not match the component to be played back.	• Connect securely. • Clean terminals and plugs. • Set switch ④ to OFF. • Set the DIRECT switch ⑥ to OFF. • Consult the operating instructions for the other components. • Set one switch or both switches to "ON". • Set the switch ② correctly (CD, PHONO, TUNER, DAT/TAPE 1).
No sound from one speaker.	• Connecting cords or speaker cords are disconnected on that side. • BALANCE control is set to one side.	• Connect securely. • Set BALANCE control to center position.
Cannot record tapes.	• Connections are incorrect. • Operation of tape deck is incorrect. • The ADPT/TAPE 2 monitor switch ④ is set to ON.	• Reconnect properly. • Consult the operating instructions for the tape deck. • Set the ADPT/TAPE 2 monitor switch ④ to OFF.
Cannot perform tape copying.	• The positions of the INPUT SELECTOR switch ② and ADPT/TAPE 2 monitor switch ④ are incorrect (when using 2 tape decks). • Operation of tape decks is incorrect.	• Set switches correctly (See section COPYING TAPES). • Consult the operating instructions for the tape decks.

SPECIFICATIONS

[A-229]

Amplifier Section

Continuous power output
(both channels driven at 20 Hz to 20 kHz)**
T.H.D. 0.07 %, 8 Ω ..... 35 W + 35 W*
DIN Continuous power output (both channels driven at 1 kHz)
T.H.D. 1.0 %, 8 Ω ..... 40 W + 40 W
T.H.D. 1.0 %, 4 Ω ..... 50 W + 50 W
Dynamic power output (E.I.A. test signal)
4 Ω ..... 66 W
Total harmonic distortion**
20 Hz to 20 kHz, 35 W, 8 Ω ..... 0.07 %*
Input sensitivity/impedance
PHONO (MM) ..... 2.5 mV/50 kΩ
CD, TUNER, DAT/TAPE 1, ADPT/TAPE 2..... 150 mV/50 kΩ
PHONO overload level
1 kHz, T.H.D. 0.1 % (MM)..... 150 mV
Output level/impedance
TAPE REC, ADAPTOR OUTPUT ..... 150 mV/2.2 kΩ
Frequency response
PHONO (MM), 20 Hz to 20 kHz ..... ± 0.5 dB
CD, TUNER, DAT/TAPE 1, ADPT/TAPE 2, 10 Hz to 50 kHz
..... $\pm\frac{1}{3}$ dB*
Tone control (volume control set at − 30 dB position)
BASS ..... ± 8 dB (100 Hz)
TREBLE..... ± 8 dB (10 kHz)
Loudness control (volume control set at − 30 dB position)
..... +6 dB (100 Hz)/+3 dB (10 kHz)
Signal-to-Noise ratio (IHF short circuit, A network)
PHONO (MM, 5 mV input) ..... 77 dB*
CD, TUNER, DAT/TAPE 1, ADPT/TAPE 2..... 100 dB*
Signal-to-Noise ratio (DIN, continuous power/50 mW)
PHONO (MM) ..... 67 dB/61 dB*
CD, TUNER, DAT/TAPE 1, ADPT/TAPE 2..... 83 dB/63 dB*

Power Supply/Miscellaneous

Power requirements
U.K., Australian models..... a.c. 240 Volts, 50/60 Hz
Other destination models
..... AC 110V/120~127V/220V/240V (switchable), 50/60 Hz
Power Construction..... 330 W
Dimensions (including knobs and other protruding parts)
..... 420 (W) x 282 (D) x 103 (H) mm
16-1/2(W) x 11-1/8(D) x 4-1/16(H) in
Weight (without package)..... 5.6 kg (12 lb 6 oz)

Accessories

Operating instructions 1

NOTE:
Specificatios and design subject to possible modification without notice, due to improvements.

* Measured with DIRECT switch set to ON.
For ADPT/TAPE 2, however, measured with the DIRECT switch set to OFF and the tone and balance controls in center position.
** Measured by Audio Spectrum Analyzer.

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Amplifier Section

Continuous power output (both channels driven at 30 Hz to 20 kHz)**
T.H.D. 0.2 %, 8 Ω ..... 25 W + 25 W*
DIN Continuous power output (both channels driven at 1 kHz)
T.H.D. 1.0 %, 8 Ω..... 30 W + 30 W
Total harmonic distortion**
30 Hz to 20 kHz, 25 W, 8 Ω ..... 0.2 %*
Input sensitivity/impedance
PHONO (MM) ..... 2.5 mV/50 kΩ
CD, TUNER, DAT/TAPE 1, ADPT/TAPE 2..... 150 mV/50 kΩ
PHONO overload level
1 kHz, T.H.D. 0.1 % (MM)..... 150 mV
Output level/impedance
TAPE REC, ADPTOR OUTPUT..... 150 mV/2.2 kΩ
Frequency response
PHONO (MM), 30 Hz to 20 kHz ..... ± 0.5 dB
CD, TUNER, DAT/TAPE 1, ADPT/TAPE 2, 10 Hz to 50 kHz
..... $\pm\frac{1}{3}$ dB*

Tone control (volume control set at − 30 dB position)
BASS ..... ± 8 dB (100 Hz)
TREBLE..... ± 8 dB (10 kHz)
Loudness control (volume control set at − 30 dB position)
..... +6 dB (100 Hz)/+3 dB (10 kHz)
Signal-to-Noise ratio (IHF short circuit, A network)
PHONO (MM, 5 mV input) ..... 77 dB*
CD, TUNER, DAT/TAPE 1, ADPT/TAPE 2..... 95 dB*
Signal-to-Noise ratio (DIN, continuous power/50 mW)
PHONO (MM) ..... 63 dB/60 dB*
CD, TUNER, DAT/TAPE 1, ADPT/TAPE 2..... 81 dB/62 dB*

Power Supply/Miscellaneous

Power requirements
U.K., Australian models ..... a.c. 240V, 50/60 Hz
Other destination models
..... AC110V/120~127V/220V/240V (switchable) 50/60 Hz
Power Construction..... 210 W
Dimensions (including knobs and other protruding parts)
U.K. model..... 420 (W) x 282 (D) x 103 (H) mm
Australian and other destination models
..... 420 (W) x 282 (D) x 98 (H) mm
Weight (without package)..... 4.6 kg (10 lb 2 oz)

Accessories

Operating instructions 1

NOTE:
Specifications and design subject to possible modification without notice, due to improvements.

* Measured with tone and balance controls set to center position.
** Measured by Audio Spectrum Analyzer.